

What is claimed is:

1. An orthotic device comprising:

a support member adapted to be secured to a body portion of a user; and

a resilient liner connected to a side of the support member adjacent the body portion

of the user;

said resilient liner having a plurality of discrete liner segments, at least one of said plurality of discrete liner segments adapted to conform to the body portion of the user to which the support member is secured.

2. The orthotic device of claim 1 wherein at least one of said plurality of discrete liner segments is removably attached to said support member.

3. The orthotic device of claim 1 wherein at least one of said plurality of discrete liner segments has an adjustable shape.

4. The orthotic device of claim 4 wherein said at least one discrete liner segment having an adjustable shape further comprises a pair of adjustable segment portions.

5. The orthotic device of claim 4 wherein each of said pair of adjustable segment portions is individually adjustable.

6. The orthotic device of claim 1 wherein at least one of said plurality of discrete liner segments has an adjustable size.

7. The orthotic device of claim 4 wherein said at least one of said plurality of discrete liner segments is inflatable or deflatable to provide said adjustable size.

8. The orthotic device of claim 1 wherein at least one of said plurality of discrete liner segments further comprises an electrode portion operably connected to a source of electrical power to impart therapeutic stimulation to an associated body portion of the user.

9. The device of claim 1 wherein said support member is semi-rigid.

10. The knee brace of claim 1 wherein at least one said plurality of discrete liner segments further comprises a micro-porous waterproof cover material contacting the body portion of the user.

11. The orthotic device of claim 1 wherein the orthotic device is a knee brace, and further comprising:

said support member having an upper cuff hinged to a lower cuff, said upper cuff adapted to be secured to adjacent a thigh of the user, and said lower cuff adapted to be secured adjacent to a corresponding calf of the user;

said hinge assembly located proximate the knee joint of the user; and

said discrete liner segments adapted to be secured between each of said upper and lower cuffs and the thigh and calf, respectively, of the user.

12. The orthotic device of claim 11 wherein said discrete liner segments conform to the shape of the user's thigh and calf as the knee brace is secured to the user.

13. A knee brace comprising for a user comprising:

a rigid arm having a hinge assembly near a midpoint thereof;

a semi-rigid cuff assembly connected to said rigid arm and adapted to fit snugly

5 about a leg of the user such that said hinge assembly is adjacent the user's knee;

at least one strap for securing said knee brace to the user's knee; and

a resilient liner having a plurality of discrete liner segments, said resilient liner connected to an interior portion of said cuff assembly for providing a secure fit between said cuff assembly and the user's leg.

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14. The knee brace of claim 13 wherein said semi-rigid cuff assembly is further comprised of a thermoplastic material and a deformable metallic material such that said semi-rigid cuff assembly is generally conformable to the user's leg.

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15. The knee brace of claim 13 wherein said semi-rigid cuff assembly is further comprised of an upper cuff having a first strap for securing said upper cuff to a thigh portion of the user, and a lower cuff having a second strap for securing said lower cuff adjacent to a calf portion of the user.

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16. The knee brace of claim 15 wherein at least one of said plurality of discrete liner segments is removable, and said at least one removable liner segment is adapted to be secured between at least one of said upper and lower cuffs and the thigh portion and calf portion, respectively, of the user.

17. The knee brace of claim 16 wherein said at least one removable liner segment conforms to the shape of at least one of the user's thigh portion and calf portion as the knee brace is secured to the user by said first and second straps.

5 18. The knee brace of claim 13 wherein at least one said plurality of discrete liner segments further comprises a micro-porous waterproof cover material contacting the body portion of the user.

10 19. The knee brace of claim 13 wherein at least one of said plurality of discrete liner segments further comprises an electrode portion operably connected to a source of electrical power such that electrical stimulation is provided to the users knee.

20. The knee brace as recited in claim 16 wherein at least one removable liner segment is attached to one of said upper and lower cuffs via a hook and loop fastener system.

15 21. A knee brace comprising:

a support member having an upper cuff and a lower cuff;

said upper cuff adapted to be secured adjacent a thigh of the user;

said lower cuff adapted to be secured about a tibia of the user;

20 a hinge connecting said upper and lower cuffs, said hinge located proximate the knee joint of the user; and

a resilient liner having a plurality of discrete liner segments, at least one of said plurality of discrete liner segments adapted to conform to the body portion of the user to which the support member is secured.

22. The knee brace of claim 21 wherein at least one of said plurality of discrete liner segments is removably attached to said lower cuff.

5 23. The knee brace of claim 22 further comprising:
said lower cuff having a back plate, said back plate having receptacle formed therein; and

at least one of said plurality of discrete liner segments having an attachment member removably received in said receptacle.

10 24. The knee brace of claim 21 further comprising:
said lower cuff having a back plate; and
at least one of said plurality of discrete liner segments attached to said back plate.

15 25. The knee brace of claim 24 wherein at least one of said plurality of discrete liner segments attached to said back plate has an adjustable shape.

26. The knee brace of claim 25 wherein said at least one discrete liner segment having an adjustable shape further comprises a pair of adjustable segment portions.

20 27. The knee brace of claim 26 wherein each of said pair of adjustable segment portions is individually adjustable.

28. The knee brace of claim 27 wherein said pair of adjustable segment portions further comprise a pair of cam portions defining a tibial crest groove therebetween, said pair of cam portions individually adjustable on either side of said tibial crest groove to at least one of conform to a particular shape of a user's tibia and maintain the tibia in a desired position.

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29. The knee brace of claim 28 wherein said pair of cam portions are individually movable in a direction in toward the user's tibia, and out away therefrom.

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30. the knee brace of claim 27 wherein said pair of adjustable segment portions comprise a pair of pad portions spaced apart to define a tibial crest groove therebetween, said pair of pad portions individually adjustable on either side of said tibial crest groove to at least one of conform to a particular shape of a user's tibia and maintain the tibia in a desired position.

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31. The knee brace of claim 30 wherein said pair of pad portions are individually movable in a direction in toward the user's tibia, and out away therefrom, and are rotatable clockwise or counter-clockwise.

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32. The knee brace of claim 30 wherein at least one of said pair of pads further has an adjustable size.

33. The knee brace of claim 30 wherein at least one of said pair of pads spacer is inflatable or deflatable to provide said adjustable size.

34. The knee brace of claim 26 further comprising a spacer provided intermediate at least one of said pair of adjustable segment portions and said back plate.

35. the knee brace of claim 34 wherein said spacer further comprises a wedge shaped chock.

36. The knee brace of claim 35 wherein said chock is removably securable between said at least one of said pair of adjustable segment portions and said back plate.

37. The knee brace of claim 34 wherein said spacer has an adjustable size.

38. The knee brace of claim 37 wherein said spacer is inflatable or deflatable to provide said adjustable size.

39. The knee brace of claim 21 wherein at least one of said plurality of discrete liner segments has at least one of an adjustable shape and an adjustable size.

40. The knee brace of claim 39 wherein said at least one of said plurality of discrete liner segments further comprises a pair of segment portions, at least one of said pair being movable to provide said adjustable shape.

41. The knee brace of claim 39 wherein said at least one of said plurality of discrete liner segments is inflatable or deflatable to provide said adjustable size.

42. the knee brace of claim 22 wherein said at least one removable liner segment is removably attached to said lower cuff by a hook and loop fastener system.